

Cancer Screening Services for the Elderly

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Synopsis.....

The reported practices and recommendations of primary care physicians with regard to cancer screening of elderly patients (65 years and older) were studied in a 1987 survey of 400 Maryland

physicians. More than 90 percent of physicians in four specialties studied reported providing digital rectal examinations, physical breast examinations, and mammography to the elderly.

However, only 54 percent of obstetrician-gynecologists and 68 percent of general practitioners provided sigmoidoscopy, 70 percent of obstetrician-gynecologists provided stool guaiac slide tests, 74 percent of general practitioners provided breast self-exam instruction, and 79 percent of internists provided Pap tests.

Physicians were asked what screening intervals they recommended for each test for asymptomatic elderly patients. These reports were compared with current American Cancer Society (ACS) recommendations. Large proportions of physicians in four specialties recommended sigmoidoscopy and mammography less often than the ACS recommended. More than 20 percent of physicians in the four specialties believed the elderly do not need routine sigmoidoscopy. Most physicians (90 percent or more) recommended Papanicolaou tests more often than the ACS recommended. Specialty and young physician age were the best predictors of physicians' overall adherence to ACS recommendations for cancer screening schedules.

CANCER SCREENING among those 65 years and older is of high priority because the elderly have a higher incidence of most cancers than other age groups, tend to have poorer relative survival rates, and tend to be diagnosed at later stages of the disease.

Data from the Surveillance, Epidemiology, and End Results (SEER) Program of the National Cancer Institute showed that, between 1973 and 1977, the median age at diagnosis for those with malignant cancers was 65.4 years, compared with 37.1 years for those with *in situ* carcinomas (1). Holmes and Hearne found that the stage-to-age relationship is particularly strong for cancer of the bladder, breast, cervix, ovary, and uterus (endometrium) (2).

The elderly report less regular cancer screening than other age groups, and little is known about

the motivations of elderly persons to seek screening (3). Data from the 1985 Health Promotion and Disease Prevention Survey showed that women 65 years and older are more likely than women in younger age groups to report never having had a Papanicolaou (Pap) test or breast examination, and to report that their last Pap test or breast examination was 5 or more years ago (4). Experts in cancer screening and prevention have pointed out the need to target older persons, particularly women, in screening programs (5, 6).

Current recommendations to physicians regarding the use of cancer screening tests and procedures contain age-specific guidelines for appropriate use of screening. The recommendations include the American Cancer Society (ACS) guidelines for the cancer-related checkup (7, 8), those of the Canadian Task Force on the Periodic Health Ex-

amination (9, 10), and the American College of Physicians' Medical Practice Committee recommendations for the periodic health examination (11).

Several studies have examined physicians' familiarity with selected recommendations as well as their self-reported adherence in their practices to the recommendations. In general, results of these studies show that when asked whether they provided specific cancer screening tests for their asymptomatic patients, most primary care physicians (frequently more than 90 percent of those surveyed) reported doing so (12, 13). However, when asked about their adherence to guidelines for screening patients in specific age groups at specific intervals, their reported practices varied with the test under consideration.

For example, the ACS found that more than 90 percent of primary care physicians surveyed in 1984 reported ever providing Pap tests, breast examinations, and digital rectal examinations for asymptomatic patients. However, when physicians were classified according to adherence to ACS guidelines for frequency of testing patients in various age groups, the proportion of physicians meeting or exceeding the guidelines was 75 percent for Pap tests, 80 percent for breast physicals, and 53 percent for digital rectal examinations (13).

Adherence to guidelines regarding the use of mammography is consistently low, compared with adherence for other cancer screening tests, as reported by several studies (12-14). Such findings have led researchers to conclude that cancer prevention services are underused and that many missed opportunities for screening occur in encounters with asymptomatic patients.

However, physician-reported screening of the elderly in particular has not been singled out for study. It is important to examine whether high self-reported rates of adherence to screening guidelines have obscured less than adequate screening of elderly patients, and whether this might help account for poor early detection rates among the elderly. In order to assess physicians' adherence to ACS guidelines for cancer screening in the asymptomatic elderly, we used data from a 1987 telephone survey of Maryland physicians.

Methods

Physician sample. A stratified random sample of Maryland physicians was drawn at the end of 1986 from the American Medical Association Physician Masterfile. The sample targeted those specialties re-

ported in an earlier study of Maryland women to be providing primary care to women. The study population of 2,722 physicians was made up of all internists, family or general practitioners, and obstetrician-gynecologists engaged primarily in patient care in nonmilitary, office- or hospital-based practice in Maryland. The sample was drawn disproportionately from each of three specialty strata in order to obtain 133 respondents from each specialty. (General and family practitioners were combined for the purposes of sampling, but were disaggregated in the analyses because they were found to differ significantly on several screening practices.) Physicians were oversampled to allow for ineligibility and nonresponse.

The sampled physicians received an introductory letter, were called by telephone, and screened for the criteria of being in active practice in the sampled specialty, not in training, and providing care to female patients. Six percent of the sampled physicians could not be located, 1 percent refused screening, and 19 percent were found to be ineligible, primarily because they were practicing in another specialty or were not providing patient care. Only two physicians were ineligible for not having female patients.

The 400 respondents to the half-hour telephone interview is a response rate of 65 percent of eligibles. No significant differences were found when we compared responders and refusers on available variables (specialty, board certification, United States or foreign medical graduate, year of medical school graduation, age, and sex). Time pressure was the major reason given for refusal.

The mean age of respondents was 47.5 years, 17 percent were women, and 32 percent had graduated from foreign medical schools. Sixty percent were board certified in their primary specialties. The predominant practice arrangements among respondents were private, solo practice (52 percent) and single-specialty groups or partnerships (24 percent); 15 percent reported multispecialty groups, including health maintenance organizations, as their principal practice arrangement. Ninety-one percent reported having admitted patients to a hospital within the past year.

On average, the physicians reported that 75 percent of their patients regarded them as their primary care provider and that 24 percent of their patients were age 65 or older. Internists had the largest proportion of elderly patients (37 percent), and obstetrician-gynecologists had the lowest (10 percent). Family and general practitioners both reported an average of 27 percent of their patients

were elderly. Overall, 58 percent of respondents reported that providing preventive services to the elderly was a large or a moderate part of their practice, 41 percent reported that it was a small part of their practice, and 1 percent reported that it was not part of their practice. Only five respondents reported that they treated no patients age 65 and older; these respondents were excluded from the analysis.

Cancer prevention services. In the telephone interview, physicians were asked about the following cancer prevention services for which ACS had published recommendations: digital rectal examinations, stool guaiac slide tests, sigmoidoscopy, physical examinations of the breast, instruction in breast self-examination, mammography, and Pap tests (7, 8).

For each service, the physician was asked whether he or she had provided service to any patient during the last year, and whether he or she had provided it to any patients age 65 or older during the last year. Physicians were not asked about the volume of a service provided, except for Pap tests. Physicians were asked what they recommended to patients age 65 or older, with regard to the appropriate screening interval for each service. The response categories for the interval questions were not read to respondents. Coding allowed for specific intervals, such as annual testing, or testing every 2 years, and included a category consistent with the current ACS recommendation for the particular test in asymptomatic persons age 65 and older. Codes were used for two other types of responses: (a) the physician reports making no recommendation for frequency because routine screening is not necessary (the test is needed only if there is a problem), and (b) the physician reports never making a recommendation for frequency of the test to the patient. This distinction was important in order to assess whether failure to adhere to ACS guidelines was because of a belief that screening was not required in the age group. All of the data in the study are self-reported.

Results

The majority of physicians in each specialty area reported that they provided or ordered each of the cancer screening services for elderly patients. More than 90 percent reported providing digital rectal examinations, physical breast examinations, and mammography (table 1).

The statistically significant specialty differences

Table 1. Percent of physicians providing cancer prevention services to patients age 65 years and older, by medical specialty

Services	General practice (N = 38)	Family practice (N = 93)	Internal medicine (N = 133)	Obstet.-Gynecol. (N = 131)
Digital rectal examinations	97	100	98	98
Stool guaiac slide tests ^{1,2}	97	99	98	70
Sigmoidoscopy ^{1,2}	68	92	91	54
Physical examination of breasts of females ²	92	100	97	100
Instruction in breast self-examination (females) ²	74	95	89	95
Mammography (females) ¹	92	99	97	99
Pap test (females) ²	97	96	79	100

¹ Physicians who provided or ordered the test during the past year.

² Relationship between specialty and provision of the service is statistically significant by the chi square test (3 degrees of freedom), *P* less than .05.

NOTE: *N* reflects number of physician respondents who treated any elderly patients.

in table 1 (determined by the chi square test for associations between specialty and service provision) were for stool guaiac slide tests, sigmoidoscopy, physical examination of the breast, instruction in breast self-examination, and Pap tests. The key specialty differences were

- Obstetrician-gynecologists were found to be less likely than other physicians to provide stool guaiac slide tests
- Obstetrician-gynecologists and general practitioners were less likely than internists and family practitioners to provide sigmoidoscopy
- General practitioners were less likely to provide physical examinations of the breast and instruction in breast self-examination, and
- Internists were less likely than other physicians to provide Pap tests.

Obstetrician-gynecologists provided the highest volume of Pap tests, an average of 176 per month, compared with 32 Pap tests per month provided by family or general practitioners and 19 per month provided by internists.

Table 2 shows the reported test-specific screening schedules physicians recommended to asymptomatic elderly patients. The responses indicate, for each test or procedure, the ACS recommendation for asymptomatic women age 65 and older at the time of the survey (8). The ACS changed its guideline for Pap testing after the survey was conducted; the

Table 2. Percent of physicians recommending schedules for selected cancer tests for patients age 65 and older, by specialty

Test and schedule	General practice (N = 38)	Family practice (N = 93)	Internal medicine (N = 133)	Obstet.-Gynecol. (N = 131)
Digital rectal examination:				
Once a year ¹	76	92	90	92
Every 2 years or more	0	1	5	1
Routine examination not needed	8	4	1	3
No recommendation made	16	2	4	4
Stool guaiac test:				
Once a year ¹	79	96	92	75
Every 2 years or more	0	0	1	1
Routine test not needed	8	1	5	8
No recommendation made	13	3	2	17
Sigmoidoscopy:				
Once a year	13	30	16	13
Every 2 years	18	10	20	9
Every 3 to 5 years ¹	16	26	16	5
Routine examination not needed	26	23	39	32
No recommendation made	26	12	8	42
Physical breast examination:				
Once a year ¹	68	95	95	100
Every 2 years or more	10	2	3	0
Routine examination not needed	5	1	0	0
No recommendation made	16	2	2	0
Mammography:				
Once a year ¹	40	48	56	76
Every 2 years or more	47	47	32	21
No recommendation made	13	4	12	2
Pap test:				
Once a year	66	58	58	92
Every 2 years or more	24	37	33	8
Routine test not needed ¹	0	2	2	0
No recommendation made	10	3	8	0

¹American Cancer Society (ACS) recommendation for asymptomatic patients age 65 and older as of the date of the survey; ACS has changed its guideline for Pap testing (15).

NOTE: "Once a year" schedule includes those respondents who reported recommending the test or examination to be obtained more often than once a year. "Routine exam or test not needed" includes respondents who reported that the exam or test is needed only if there is a problem, that is, routine screening tests are not needed.

Number of subjects (N) reflects only those respondents who treat any elderly patients.

new guideline does not specify an age after which Pap testing is no longer required (15). Substantial proportions of physicians appear not to have been adhering to ACS guidelines prevailing at the time of the survey.

General practitioners were found to be less likely than other physicians to recommend annual digital

rectal examinations to their elderly patients, and 16 percent reported making no recommendations for digital rectal examinations to them. General practitioners and obstetrician-gynecologists were less likely to recommend annual stool guaiac slide tests for their elderly patients. More than 10 percent of physicians in both specialties were making no recommendations about stool guaiac tests. All specialty groups contained substantial proportions of providers who believed that routine sigmoidoscopy was not necessary in elderly patients, and relatively small proportions recommended sigmoidoscopy every 3 to 5 years, consistent with ACS recommendations. Some providers were recommending sigmoidoscopy more often than recommended by the ACS. General practitioners were less likely than other providers to recommend annual physical breast examinations for their elderly patients, and were more likely than other providers to make no recommendations at all. All specialty groups contained substantial proportions of providers who recommended mammography less often than annually for elderly women, although obstetrician-gynecologists most closely adhered to ACS guidelines in this area. None of the specialty groups was adhering to the ACS recommendation that Pap testing be discontinued after age 65. Obstetrician-gynecologists were most likely to recommend annual Pap tests for elderly women.

Among the factors that could account for inter-specialty differences in screening recommendations are differences in training and area of practice specialization, age of the physician, proportion of elderly patients seen, and the type of practice arrangement. All can contribute to whether a physician recommends screening tests and does so in a manner consistent with ACS guidelines. For example, general practitioners in the sample tended to be older than the other physicians (their mean age was 59 years), and they are more likely to have been practicing in private solo practices than physicians in other specialties; obstetrician-gynecologists were less likely to be treating elderly patients.

We explored the independent effects of specialty, physician age, type of practice arrangement, and likelihood of treating elderly patients on physicians' reported adherence with ACS scheduling recommendations. We conducted a multiple regression analysis in which the dependent variable was defined as the number of tests or procedures (ranging from none to 6) for which the physician reported recommendations to elderly patients consistent with

ACS guidelines in effect at the time of the survey. On this dependent variable, general practitioners were found to differ significantly from the other specialties. General practitioners adhered to ACS recommendations for an average of 2.8 tests or procedures, compared to 3.5 for obstetrician-gynecologists and internists, and 3.6 for family practitioners.

Results of the multiple regression analysis showed that specialty and physician age are the most important predictors of physician adherence to ACS recommendations regarding screening schedules for elderly patients (table 3). Family practitioners and obstetrician-gynecologists were significantly more likely than general practitioners to adhere to a greater number of ACS recommendations, and older physicians were significantly less likely to do so (independent of their specialty area). The variables internal medicine and percent of patients age 65 and older attained borderline significance at $P = .06$. Solo practice had no independent effect on adherence.

Discussion

The investigation found that a large majority of primary care physicians reported providing cancer screening services to elderly patients. However, several tests were identified for which physicians in one or two specialties were significantly less likely than the others to report providing the service. These included stool guaiac tests and sigmoidoscopy among obstetrician-gynecologists; sigmoidoscopy, physical examinations of the breast, and instruction in breast self-examination among general practitioners; and Pap tests among internists.

The study apparently is the first to examine primary care physicians' reported recommendations to their asymptomatic elderly patients regarding appropriate intervals for cancer screening tests. The findings identified several areas in which ACS recommendations for screening of elderly patients were not being widely followed. The most serious deficiencies appear to occur for sigmoidoscopy and mammography, for which large proportions of physicians in all specialties were recommending screening less often than the ACS recommends for elderly patients; for sigmoidoscopy, at least one-fourth of physicians reported that they did not believe that the elderly need routine screening.

For Pap testing, less than 2 percent of the physicians studied reported adhering to the ACS recommendation to discontinue regular Pap testing

Table 3. Determinants of adherence to ACS recommendations for screening of asymptomatic elderly patients¹

Independent variable	Mean	Standard deviation	Standardized partial regression coefficient
Specialty: ²			
Internal medicine.....	.33	.47	.17
Family practice.....	.24	.43	³ .20
Obstetrics-gynecology.....	.33	.47	³ .26
Physician's age.....	47.17	12.05	³ -.24
Percent of patients			
age 65 years or older.....	24.89	17.65	.12
Solo practice.....	.52	.50	-.09
R ².....	...	...	.12
Multiple r.....	...	...	.34
F for equation.....	...	...	⁴ 8.64
Degrees of freedom.....	...	...	6,382

¹The dependent variable is the number of tests or exams for which the physician's recommendation to elderly patients adhere to current American Cancer Society recommendations. The possible range for this variable is 0 to 6; the mean is 3.46 (standard deviation = 0.97). The analysis is based on 389 physicians.

²General practice is the omitted reference category.

³Univariate F-test significant (P less than .05).

⁴ $P = .00001$.

after age 65; most are recommending Pap tests more frequently than ACS recommended for this age group at the time of the survey. Nearly all obstetrician-gynecologists reported recommending annual Pap tests for their elderly patients, a finding that is not surprising, considering that the American College of Obstetricians and Gynecologists continued to recommend annual Pap testing for all women at the time of the study (16).

We asked physicians whether they agreed or disagreed with the prevailing ACS recommendation; 80 percent reported that they disagreed with it (3 percent reported that they were undecided). Among those who disagreed, we asked three questions about their possible reasons for disagreeing: 73 percent of those disagreeing reported that the Pap test is an important inducement to get patients in for regular checkups; 56 percent reported that the elderly are at greater risk of developing cancer; and 55 percent reported that the elderly are less likely to have been screened regularly in the past. Thus there is considerable evidence that the physicians in this study believed that elderly women should receive Pap tests regularly and more frequently than was recommended by the ACS at the time of the survey.

Three of the cancer screening services for which general practitioners were least likely to be practicing consistent with ACS guidelines were instruction in breast self-examination, physical breast examinations, and digital rectal examinations. These services do not require special equipment or technology in the physician's office and would require a

minimum of training. Hence the findings suggested the possibility that general practitioners might be less familiar with current thinking about the importance of these screening services, or might hesitate to recommend or provide them owing to concerns about their patients' sensitivity on these matters. (General and family practitioners reported treating similar proportions of elderly patients; hesitancy about recommending these services might have had less to do with the patient's age than with the physician's age and attitudes.) The study identified general practitioners as a group whose practices could readily be made more congruent with current guidelines for cancer screening in the elderly through increased use of low-technology screening services.

The study provided more detailed data than previous studies about reported cancer screening practices for the elderly and suggested that specialty area and physician age are key factors affecting whether or not physicians recommend cancer screening schedules consistent with ACS guidelines. The findings support continuing education efforts targeting specific specialties and focusing on specific screening services. Both technologically intense screening services (mammography and sigmoidoscopy), and low-technology services (physical breast examination, digital rectal examinations, and instruction in breast self-examination) have been found to be likely targets for educational efforts.

The study does not address the appropriateness of current ACS guidelines for cancer screening in the elderly. There are certain areas, notably the Pap test, that have been controversial, and it is possible that observed patterns of practice among physicians may reflect appropriate disagreement with ACS guidelines. The variations across specialties and screening services observed serve to focus attention on points of disagreement or nonadherence, so that consideration may be given to altering physicians' practices, altering the guidelines, or both.

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